

REMARKS

Claims 1-23 are all the claims pending in the application. By this Amendment, Applicant amends claim 2 to further clarify the invention.

Summary of the Office Action

The Examiner found new grounds for rejecting claims 1-23. In particular, claims 1-5, 8-15, and 18-23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the article titled “Network Function for the application of Multirate Speech Coding in Digital Cellular Systems” to Yasuda et al. (hereinafter “Yasuda”) and claims 6, 7, 16, and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yasuda in view of U.S. Patent No. 6,421,527 to DeMartin et al. (hereinafter “DeMartin”).

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1-5, 8-15, and 18-23 are rejected under 35 U.S.C. § 102(b) as being anticipated by Yasuda. Applicant respectfully requests the Examiner to reconsider and to withdraw this rejection in view of the comments, which follow. Of the rejected claims only claims 1, 2, 11, 12, 21, and 22 are independent. This response initially focuses on the independent claims.

For example, independent claim 1 recites: “if said first coding mode is not compatible with said tandem free operation mode, changing said first coding mode to a second coding mode which is compatible with said tandem free operation mode.” The Examiner asserts that claim 1 is directed to a method of using tandem free operation (hereinafter TFO) mode and is anticipated by Yasuda. The Examiner asserts that Yasuda’s method of selecting a common coding mode is

similar to changing the first coding mode to a second coding mode when the TFO is impossible with the first coding mode (see page 3 of the Office Action). Applicant respectfully disagrees with the Examiner. Applicant has carefully studied Yasuda's discussion of a codec bypassed connection control method, which is not similar to switching to the second coding mode when the TFO is incompatible with the initial coding mode, as set forth in claim 1.

The conventional technique described in the specification teaches that to establish TFO communication mode, negotiation between like entities of the system is required. Because the coding mode is generally selected independently for each of the mobile stations, a common coding mode between the two must be negotiated. However, there are certain coding modes with which TFO mode is incompatible, e.g. adaptive coding mode. In the conventional techniques, when the initial selected mode is incompatible with the TFO mode, no negotiations take place, and as a result, two transcoding operations are performed (no TFO mode). In the method as set forth in claim 1, however, "if said first coding mode is not compatible with said tandem free operation mode, changing said first coding mode to a second coding mode which is compatible with said tandem free operation mode". Therefore, unnecessary reduction of speech quality (by performing two transcoding operations) is prevented.

Yasuda is no different from the prior art disclosed in the specification. Yasuda teaches conventional codec matching. In particular, Yasuda teaches interrogating home memory (HM) to select an available coding method for both mobile stations (Fig. 6A; page 308). In addition, Yasuda teaches using handovers to resolve codec mismatches. That is, the originating mobile switching center (MSC) selects a coding method and notifies the selected coding method to the

terminating MSC. If the selected coding method is not available for the terminating MS, the terminating MSC requests a handover to the originating MSC (Fig. 6B; page 309).

Yasuda, however, does not address the problem of having certain coding methods being incompatible with TFO. Instead, Yasuda teaches simple codec mismatch resolution. In Yasuda, the negotiations are performed between the mobile stations, which initially select TFO compatible coding method (e.g., half rate, full rate). In other words, Yasuda simply teaches selecting a common codec for two mobile stations, which are initially set to TFO compatible coding modes (HR or FR). Yasuda fails to teach or suggest changing a first coding mode, which is not compatible with the TFO mode to a second coding mode, which is compatible with the TFO mode. Yasuda only deals with TFO compatible coding modes. In short, the reference only teaches obtaining a common codec mode between two TFO compatible mobile stations.

Therefore, “if said first coding mode is not compatible with said tandem free operation mode, changing said first coding mode to a second coding mode which is compatible with said tandem free operation mode,” as set forth in claim 1 is not suggested or taught by Yasuda, which lacks changing coding types in case the initially selected coding type is incompatible with the TFO mode. For at least this reason, Applicant respectfully submits that independent claim 1 is patentably distinguishable from (and is not obvious in view of) Yasuda. Applicant, therefore, respectfully requests the Examiner to withdraw this rejection of independent claim 1.

Next, Applicant addresses this rejection with respect to independent claim 2. Independent claim 2, as now amended, recites: “if said first coding mode is not compatible with said tandem free operation mode, changing said first coding mode to a second coding mode

which is compatible with said tandem free operation mode...signaling said first coding mode or when said first coding mode is changed to said second coding mode, signaling said second coding mode, for each of said mobiles...selecting a common coding mode for tandem free operation based on said signaled coding modes for each of said mobiles...”

The Examiner alleges that claim 2 is directed to a method of optimizing speech quality and is anticipated by Yasuda. In particular, the Examiner alleges that Yasuda’s method of negotiating a common codec by a handover is equivalent to both changing the first signaling code to a second signaling code, when the first signaling code is not compatible with TFO and selecting a common coding mode for TFO based on the signaled code (pages 3-4 of the Office Action). Applicant respectfully disagrees. Applicant has carefully studied Yasuda’s discussion of the speech coding negotiation and such teachings are very dissimilar to changing the first coding mode to the second coding mode and when such change occurs, signaling the second coding mode, as set forth in claim 2.

Yasuda simply teaches selecting a coding method, notifying of the selection and if the selection is not supported by the terminating MSC, performing handover. *Assuming arguendo* Yasuda’s step of selecting a coding method can be compared to the selecting of a first coding mode and Yasuda’s steps of signaling the selected coding mode and performing hand over when mismatch occurs can be compared to signaling the first coding mode and selecting a common coding mode, as set forth in claim 2. Yasuda still fails to teach or suggest changing the initially selected coding mode if it is incompatible with tandem free operating mode, as explained above. In Yasuda, once the mode is selected, it is only changed during handover, when codec

mismatching occurs. In short, Yasuda fails to teach or suggest changing said coding mode. In addition, Yasuda only teaches signaling the selected coding mode, it fails to teach or suggest signaling a second coding mode when the change occurred.

Therefore, “if said first coding mode is not compatible with said tandem free operation mode, changing said first coding mode to a second coding mode which is compatible with said tandem free operation mode...signaling said first coding mode or when said first coding mode is changed to said second coding mode, signaling said second coding mode, for each of said mobiles...selecting a common coding mode for tandem free operation based on said signaled coding modes for each of said mobiles...”, as set forth in claim 2 is not suggested or taught by Yasuda, which lacks changing coding types in case the initially selected coding type is incompatible with the TFO mode. For at least this reason, Applicant respectfully submits that independent claim 2 is patentably distinguishable from (and is not obvious in view of) Yasuda. Applicant, therefore, respectfully requests the Examiner to withdraw this rejection of independent claim 2. Claims 3-5 and 8-10 are patentable at least by virtue of their dependency on claim 2.

Independent claims 11, 12, 21, and 22 recite features similar to the features argued above with respect to claim 1. In particular, independent claims 11 and 12 recite: “means for replacing said first coding mode if said first coding mode is not compatible with said tandem free operation mode, to a second coding mode which is compatible with said tandem free operation mode” and claims 21 and 22 recite: “means for, if said first coding mode is not compatible with a tandem free operation mode, changing said first coding mode to a second coding mode which is

compatible with said tandem free operation mode.” Since claims 11-12 and 21-22 contain features that are similar to the features argued above with respect to claim 1, those arguments are respectfully submitted to apply with equal force here. For at least substantially the same reasons, therefore, Applicant respectfully requests the Examiner to withdraw this rejection of independent claims 11-12 and 21-22. Also, Applicant respectfully submits that claims 13-15 and 18-20 are patentable at least by virtue of their dependency on claim 12.

In addition, independent claim 22 recites: “means for initiating a negotiation for selecting a common coding mode for said tandem free operation, with said second coding mode.” Yasuda only teaches negotiation for the common coding mode with the initially selected, first coding mode. Yasuda fails to teach or suggest changing the coding mode when it is incompatible with the TFO and initiating the negotiation with a changed coding mode. Therefore, for at least this additional reason, independent claim 22 is patentable distinguishable (and is patentable over) Yasuda. Claim 23 is patentable at least by virtue of its dependency on claim 22.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 6, 7, 16, and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yasuda et al. in view of DeMartin. Applicant respectfully traverses this rejection with respect to the dependent upon claims 2 and 12, claims 6-7 and 16-17, respectively. Applicant has already demonstrated that Yasuda does not meet all the requirements of independent claims 2 and 12. DeMartin clearly fails to cure the deficient teachings of Yasuda. DeMartin is being cited only for its teaching of AMR. Specifically, the Examiner asserts that “...the TFO modes cannot be used with the AMR....it would have been obvious for one skilled in the art when carrying out or

building the Yasuda's method/system to include the AMR coding mode as taught by DeMartin so that it is capable to send in-band information without connection crashed" (page 8 of the Office Action).

To begin, DeMartin simply teaches a method for dynamic adoption of speech/channel coding. In short, DeMartin clearly fails to cure the deficient teachings of Yasuda. In addition, one of ordinary skill in the art would not have been motivated to combine DeMartin and Yasuda in the manner suggested by the Examiner. The Examiner alleges that one of ordinary skill in the art would have been motivated to combine the two references so that Yasuda's system will be capable of sending in-band information without crashing. In-band information, however, relates to AMR mode. In particular, as taught by DeMartin, to implement adaptive mode, and one that is in accordance to the new GSM AMR standards as specified in ETSI protocol, an in-band information needs to be transmitted which includes the quality of the down-link channel and a codec command from the base station to the corresponding mobile station (col. 2, lines 8 to 28).

DeMartin has nothing to do with codec mismatching or with mobile to mobile communication. Instead, DeMartin is related to efficiently utilizing a channel by dynamically allocating and re-allocating parts of the channel to error control bits and speech bits depending on the conditions of the channel (col. 2, lines 1 to 5). Yasuda teaches negotiating to establish the TFO mode, where the entities of the telecommunication network utilize TFO compatible coding methods. In short, there is no motivation to combine Yasuda's codec mismatch resolution and DeMartin's teaching of dynamic allocation of the channel portions (AMR) for GSM network.

Clearly, the combined teachings of Yasuda and DeMartin would not have (and could not have) led the artisan of ordinary skill to have achieved the subject matter of claims 2 and 12. Since claims 6-7 and 16-17 are dependent upon claims 2 and 12, respectively, they may be patentable at least by virtue of their dependency.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

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